

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grote et al. (5,028,850) in view of Sluyterman et al. (5,170,102).

Regarding claim 1, Grote discloses beam spot control system showing a first deflection coil system (col. 4, line 66, to col. 5, line 1), a second deflection coil system (col. 5, lines 1-9), and correction coils (stigmator 24). It should be noted that the stigmator 24 is intended to correct any misconvergence or distortion caused by the first and second deflection systems. The distortion could be either a barrel shape or a pincushion shape as mentioned in col. 4, line 66, to col. 5, line 9. However, Grote does not disclose the linear electron guns which are oriented parallelly with the short axis. Sluyterman, from the similar field of endeavor, teaches such electron guns (note Figures 4 and 6), which, by using vertically (shorter axis) oriented electron guns, the beam spots deformation problem as discussed in the background of the invention could be reduced. Since Grote also strides to reduce the beam spot distortion, it would have been obvious to one of ordinary skill in the art at the time that the invention was made to include Grote into Sluyterman so that the beam spot distortion could be further reduced.

Regarding claim 2, see Figures 6a and 6b.

Regarding claim 3, see deflection yoke 55.

Regarding claim 4, as shown in Figure 2, the correction coils 24 are located at the dynamic astigmatism correction point of the electron gun. At the same time, the coils are also located 90 degrees from each as shown in Figures 6a and 6b.

Regarding claim 5, the coils are dynamically controlled.

Regarding claim 6, the coils are driven at the horizontal deflection rate (note Figure 5).

Regarding claims 7 and 8, Grote has overconvergence problems due to pincushion and barrel distortions. Although not specify, the overconvergence could be in the range of 5-35 mm.

Regarding claim 9, the misconvergence problem aggravates as the horizontal deflection rate increases.

Regarding claim 10, see col. 10, line 36, to col. 11, line 34.

Regarding claim 11, Sluyterman teaches a screen with 16:9 aspect ratio (col. 4, lines 33-35).

Regarding claims 12-17, in addition of above, the stigmator 24 includes at least two coils as shown in Figures 6a and 6b, which meet the third and fourth deflection coils as claimed.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sluyterman et al. (5,565,732) shows a correction coil.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Lee whose telephone number 571-272-7349. The examiner can normally be reached on Monday through Thursday from 9 to 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran, can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/M. Lee/
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